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EPSAS issue paper on the accounting treatment of infrastructure assets

Paper by Ernst & Young on behalf of Eurostat

- for discussion

Accounting treatment of infrastructure assets with a view to financial reporting requirements under the future European Public Sector Accounting Standards (EPSAS)

17 February 2017

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1. Objectives of the Issue Paper

The aim of this paper is to develop an analysis for Member States' discussion on how to account for infrastructure assets under the future EPSAS.

This paper takes into account:

- All publicly available information on the IPSASB meetings in which infrastructure assets were discussed;
- The existing approaches under the following international financial reporting frameworks, i.e. IPSAS, European Union Accounting Rules (EAR), IFRS and ESA 2010; and
- The approaches taken at the accounting standard level in two Member States and the City of Essen/Germany.

The issues paper will address the following issues:

- What are the most important categories of infrastructure assets?
- For which of these categories do problematic points/issues arise with regards to definition, recognition and measurement?
- What are the advantages and disadvantages of the existing approaches to recognition and measurement?
- Which categories of infrastructure assets should be treated by future EPSAS standards or guidance taking into account materiality and comparability considerations?
- What are the consequences for a possible convergence between IPSAS and ESA?
- Could a future EPSAS standard contribute to the European Commission's priority on investment?

The issues paper concludes with a suggestion for an approach that could be followed to organize future discussions on accounting for infrastructure assets with the EPSAS stakeholders.

2. Background

Infrastructure assets are one of the most material items within property, plant and equipment in many public sector entities' statement of financial position. Supporting investment in these assets is one of the European Commission's top priorities.

On an international level no specific standard on the accounting treatment of infrastructure assets exists. Instead under IPSAS, IPSAS 17, the standard applicable to property, plant and equipment, is applied to the accounting of infrastructure assets. However, the Commission Staff working document[1] has indicated that the application of this standard to infrastructure assets can be problematic:

"The recognition and valuation of immovable property would be a long and difficult process. It requires consumption of economic benefit to be estimated against impairment loss. On that basis IPSAS 17 is seen as problematic for the accounting and measurement of public infrastructure. Specific issues arise for accounting of impairment and for use of the component method for measurement."

The PwC report from 2014[2] provides a first high level view of the current practice in the EU Member States at central government level and gives an indication on whether central governments in Member States account for these types of assets and if so, how:

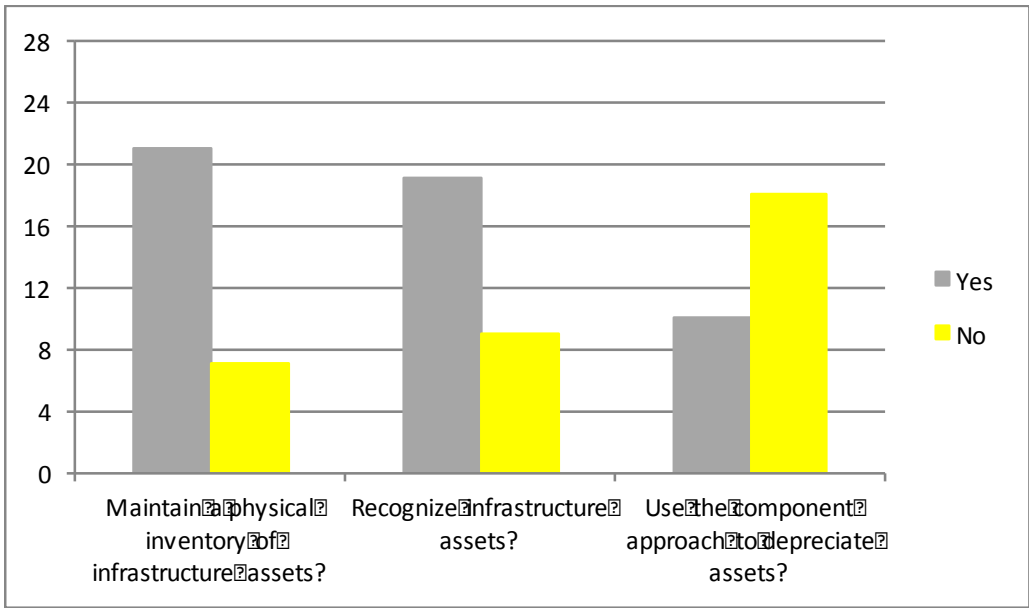

Figure 1: Summary results of the PwC report from 2014 (central government level)

1 See Commission Staff Working Document, Brussels, 6 March 2013, annex 6.1.

2 See PwC, Collection of information related to the potential impact, including costs, of implementing accrual accounting in the public sector and technical analysis of the suitability of individual IPSAS standards, Brussels, 1 August 2014, pages 100, 101 and 104.

The Eurostat study performed only analysed the depreciation of assets in general. Therefore, the results to the last question on the use of the component approach applies to all assets and not specifically to infrastructure assets. The study does give infrastructure assets as an example of assets to which the component approach is applied, though.

The EPSAS Cell on First Time implementation has recommended in its draft final report[3] comprehensive stocktaking and recognition for infrastructure assets that would remain within the organization for more than one year, including assets under construction. The use of materiality thresholds or the grouping of assets in clusters is also recommended for recognition purposes. Next to that, it recommends the presentation of infrastructure assets under property, plant and equipment in the statement of financial position.

3 See EPSAS, Cell on First Time Implementation: Draft Final Report, EPSAS WG 16/02, Luxembourg, 16 June 2016, page 9 and Annex 1.

3. Description of accounting guidance available

The following paragraphs provide an overview of the existing accounting guidance with respect to accounting for infrastructure assets.

3.1 IPSAS

The IPSASB conceptual framework[4] sets out that the primary reason for holding property, plant and equipment and other assets in the public sector is their service potential rather than their ability to generate cash flows. Because of the types of services provided, a significant proportion of assets used by public sector entities are specialized. One type of these specialized assets is infrastructure assets. The accounting guidance with respect to accounting for these assets is embedded in IPSAS 17 "Property, plant and equipment".[5]

Definition of infrastructure assets

The current IPSAS guidance[6] does not define infrastructure assets but specifies that these assets meet the definition of property, plant and equipment and should be accounted for in accordance with IPSAS 17. The standard also states that infrastructure assets usually display some or all of the following characteristics[7]:

- They are part of a system or network;
- They are specialized in nature and do not have alternative uses;
- They are immovable; and
- They may be subject to constraints in disposal.

No explicit categorization to further distinguish infrastructure assets is mentioned in the current standard, but the standard does provide the following examples of infrastructure assets:

- Road networks;
- Sewer systems;
- Water and power supply systems; and
- Communication networks.

Recognition

4 IPSASB's Conceptual Framework, Preface, paragraph 14.

5 The IPSASB envisages starting a project on infrastructure assets. According to the Work Plan 2016-2020 from December 2016 the IPSASB plans to have its first discussion on that subject in its June 2017 meeting.

6 IPSAS 17 "Property, plant and equipment", paragraph 21.

7 IPSAS 17 "Property, plant and equipment", paragraph 21.

IPSAS 17 requires the application of the general recognition criteria[8] for property, plant and equipment also to infrastructure assets.

8 IPSAS 17 "Property, plant and equipment", paragraph 14.

These criteria require the capitalization of initial costs if and only if:

- It is probable that future economic benefits or service potential associated with the item will flow to the entity; and
- The cost or fair value[9] of the item can be measured reliably.

Costs incurred after initial recognition are divided into three groups for recognition purposes:

- Repairs and maintenance expenditure[10]: not recognized in the carrying amount of the asset;
- Replacement parts[11] (for example a road that needs resurfacing every few years): recognized if it meets the recognition criteria; and
- Costs of major inspections[12]: recognized if these are a condition of continuing to operate the asset.

Upon initial recognition, application of the component approach requires to identify the different items (with a cost that is significant in relation to the total cost of the asset) the asset is composed of, so that each component of the PP&E asset can be depreciated separately based on its respective useful live.

Measurement

IPSAS 17 requires the application of the general measurement rules[13] for property, plant and equipment also to infrastructure assets. These rules require for initial measurement:

- An asset acquired through an exchange transaction to be measured at cost; and
- An asset acquired through a non-exchange transaction to be measured at fair value.

Subsequently, an entity can choose[14] to apply either the cost model or the revaluation model.

No exception is provided for infrastructure assets in terms of application of the component approach[15]. This approach requires each part of an item of property, plant, and equipment with a cost that is significant in relation to the total cost of the item to be depreciated

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9 The IPSASB's Conceptual Framework does not include fair value as a measurement basis. Instead of fair value the Conceptual Framework refers to market value as a measurement basis. For more details see IPSASB, The Conceptual Framework for General Purpose Financial Reporting by Public Sector Entities, October 2014, BC7.20 ff. In 2017 the IPSASB will start a project on "Public sector measurement".

10 IPSAS 17 "Property, plant and equipment", paragraph 23.

11 IPSAS 17 "Property, plant and equipment", paragraph 24.

12 IPSAS 17 "Property, plant and equipment", paragraph 25.

13 IPSAS 17 "Property, plant and equipment", paragraphs 26 and 27.

14 IPSAS 17 "Property, plant and equipment", paragraph 42.

15 IPSAS 17 "Property, plant and equipment", paragraph 59.

separately. For example[16] according to IPSAS 17 it would be required to depreciate separately the pavements, formation, curbs and channels, footpaths, bridges, and lighting within a road system. Given that roads often consist of separate layers with different useful lives the component approach needs to be applied. This measurement approach ensures that the depreciation of the road is allocated in accordance with the consumption of the resource and therefore with the related cause of cost

Infrastructure assets must be tested for impairment similarly as other property, plant and equipment through the application of the rules stated in IPSAS 21 "Impairment of non-cash generating assets" and IPSAS 26 "Impairment of cash-generating assets".

Disclosures

IPSAS 17 requires the application of the general disclosure requirements[17] for property, plant and equipment also to infrastructure assets. These require disclosure of matters such as:

- The measurement basis used;
- The depreciation method used;
- The gross carrying amount;
- The accumulated depreciation at the end of the period; and
- A reconciliation of the carrying amount at the beginning and end of the period showing certain components thereof.

3.2 European Union Accounting Rules

No separate rule exists on infrastructure assets in the suite of European Union Accounting Rules. Accounting rule 7 "Property, plant and equipment" does not define infrastructure assets and as a consequence has no specific accounting requirement for these assets.

3.3 IFRS

No specific standard on infrastructure assets exists in the suite of IFRS standards. Infrastructure assets (such as roads owned by a private sector entity) are to be accounted for using the same principles as those applied to other assets held by entities, which are provided in IAS 16 "Property, plant and equipment".

3.4 National accounts/statistical reporting (ESA 2010)

3.4.1 Definitions and classification of assets under ESA 2010

A balance sheet is defined as a "statement, drawn up for a particular point in time, of the values of assets economically owned and of liabilities owed by an institutional unit or group of units"[18].

With regard to the recording of assets in the balance sheet, ESA distinguishes two main categories of assets:

- Non-financial assets (denoted as AN);
- Financial assets (denotes as AF).

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17 IPSAS 17 "Property, plant and equipment", paragraph 88.

18 ESA 2010, paragraph 7.01.

Any infrastructure assets recorded under ESA need to be included within the first category of "non-financial assets". This category is further subdivided into "produced non-financial assets" (AN.1) and "non-produced non-financial assets" (AN.2). While the former category is always the result of some kind of production process, the later refers to economic assets that came into existence other than through the process of production (e.g. lands, contracts, permits, etc.). Since infrastructure is always the result of some kind of production process, any infrastructure assets recorded by ESA will necessarily be included within category AN.1 of produced non-financial assets.

Category AN.1 is further subdivided into fixed assets (AN.11), inventories (AN.12) and valuables (AN.13). Fixed assets (AN.11) are assets used repeatedly or continuously in production for more than one year. Inventories (AN.12) are used up in production as intermediate consumption, sold or otherwise disposed of. Lastly, valuables (AN.12) are not used primarily for production or consumption, but are instead acquired and held primarily as stores of value.

Even though infrastructure is not explicitly identified as a separate asset category under ESA, the preceding analysis makes clear that any infrastructure assets recorded under ESA is recorded within AN.11 "fixed assets". This subcategory is itself again divided into a series of other subcategories, including for example "dwellings" (AN.111), "buildings other than dwellings" (AN.1121), "other structures" (AN.1122), "machinery and equipment" (AN.113), and many more.

In the context of infrastructure assets, it is the pre-mentioned subcategory "other structures" (AN.1122), which seems particularly relevant. According to annex 7.1 of ESA 2010, examples of assets recorded within that subcategory are "*highways, streets, roads, railways and airfield runways; bridges, elevated highways, tunnels and subways; waterways, harbours, dams and other waterworks; long-distance pipelines, communication and power lines; local pipelines and cables, ancillary works; constructions for mining and manufacture; and constructions for sport and recreation*".

In order to assess the accounting treatment of infrastructure assets under ESA 2010, the sections below will review the recognition and measurement of "fixed assets" (AN.11) and – within that category – of "other structures" (AN.1122) in particular.

3.4.2 Recognition

The general principle under ESA 2010 is to record all items, which are within the system's boundary, i.e. all items which meet the definition of particular asset category under ESA.

With regard to the time of recording, the general rule is then to record flows and transactions on an accrual basis; that is, when economic value is created, transformed or extinguished, or when claims and obligations arise, are transformed or are cancelled.[19] According to this general rule, fixed assets (including infrastructure) are recognized in the accounts (i.e. balance sheet, capital account, and financial account, see below) at the moment they are acquired or built.

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19 See ESA 2010, paragraph 1.101.

Under ESA, investments in fixed assets (including infrastructure) are recorded as increases of government deficit (or reductions of government surplus) for amounts equivalent to the cost of the assets.[20]

In fact, in the ESA 2010 sequence of accounts, revenues and expenditures are also recorded in the capital account (amongst other accounts. The balancing item of the capital account corresponds to the surplus/deficit[21] (equivalent to the difference between revenues and expenditures). Under ESA, the notion of "expenditure" however also comprises **capital expenditures**, which includes expenditures on acquisitions and constructions of fixed assets.[22] Therefore, investments in fixed assets (including infrastructure) by government are not only recorded on government balance sheet but also in the capital account, and thus reflected in government surplus/deficit.

At the same time as an investment is recorded in the capital account, the financing of that investment is also recorded in the financial account[23] for the same amount. In the case of infrastructure investments, the capital account will include an entry for the infrastructure asset expenditure while the financial account will include entries for the incurrence of liabilities and/or the use of cash related to the financing of the infrastructure asset.

3.4.3 Measurement

The general rule with regard to the measurement of items on the balance sheet is to value each item as if it were being acquired on the date to which the balance sheet relates. ESA 2010 specifies that estimates should be used in those cases where no observable market prices are available (for example when there is a market but no assets have recently been sold on it)[24].

According to paragraph 7.42 of ESA 2010, fixed assets (including infrastructure) should be measured at market prices if possible (or basic prices in the case of own-account production of new assets) or, if not possible, at current purchasers' prices reduced for the accumulated consumption of fixed capital[25] (which is known as the written-down replacement cost). ESA 2010 specifies that most fixed assets can normally be recorded at

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20 Manual on Government Deficit and Debt (MGDD) – Implementation of ESA 2010, 2016 ed., page 289.

21 Equivalent to the net lending(+)/borrowing(-), which is the balancing item of the capital account in the ESA sequence of accounts, see ESA 2010, paragraphs 1.113 and 20.68 – 20.72.

22 ESA 2010, paragraph 20.70.

23 The financial account records net acquisitions of financial assets and net incurrence in liabilities. Expenditure and revenue entries in the capital account always have a counterpart entry in the financial account, see ESA 2010, paragraph 20.71.

24 ESA 2010, paragraph 7.34.

25 According to ESA 2010, paragraph 3.143 "consumption of fixed capital" shall be calculated according to the 'straight line' method, by which the value of a fixed asset is written off at a constant rate over the whole lifetime of the good.

written-down replacement cost. However, in those cases where no direct information on the stock of fixed assets is available, ESA indicates that the "perpetual inventory method" should be used in order to estimate its current market value.[26]

Under the perpetual inventory method, the variation in "total fixed asset values" from one year to the other is calculated as the sum of investments (referred to as "Gross fixed capital formation") minus depreciation for the year (referred to as "Consumption of fixed capital"[27]) plus other changes in the volume of the assets, and adjusted according to an asset price index in order to reflect current value (referred to as "Revaluations"):[28]

Net value of a specific type of asset in closing balance sheet
=
Net value in opening balance sheet + Gross fixed capital formation – Consumption of fixed capital + Other volume changes + Revaluations

Each component of the formula is explained in more detail below:

- **Gross fixed capital formation** consists of resident producers' acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realised by the productive activity of producers or institutional units.[29]
- **Consumption of fixed capital** is the decline in value of fixed assets owned, as a result of normal wear and tear and obsolescence.[30]
- **Other volume changes** are changes in volume of assets which do not result from an economic transaction but which will affect the values of assets at the closing period. Other volume changes refer to real changes to fixed capital brought about by events which are not part of the economy, e.g. a large earthquake destroying a significant amount of assets.[31]

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26 ESA 2010, paragraph 1.24 (b) and paragraph 3.141.

27 The term "consumption of fixed capital" has a different name than depreciation because it is a macroeconomic concept.

28 The perpetual inventory method is a practical approach applied in finance statistics that is used to approximate the conceptually ideal variation in total fixed asset values.

29 See ESA 2010, para. 3.124.

30 See ESA 2010, para. 3.139.

31 See ESA 2010, para. 1.129.

- **Revaluations** are changes in value for the owner of the asset as a result of a change in its price. Similarly to other volume changes, they do not result from an economic transaction.[32]

This modelling approach allows to approximate variations between periods and based on that, absolute values at the end of each period. It has also to be noted that ESA does not use the concept of impairment of assets.

Finally, the statistical systems also provide rules with regard to the capitalization of expenditures under the perpetual inventory model: Expenditures that increase the useful life of the assets (e.g. major structural works) can be capitalized as investments (i.e. recorded within gross fixed capital formation[33]). Ordinary maintenance and repairs, in contrast, are not capitalized as it is seen as "intermediate consumption" rather than an investment.[34]

3.5 National public sector accounting frameworks

This chapter describes the approaches used to account for infrastructure assets in Member States with a high accounting maturity. The Member States France and Austria were selected for further analysis. For those Member States we have looked at the accounting for infrastructure assets at the central government level. This was supplemented by an analysis of the City of Essen, which is a large city in the Federal Republic of Germany. The City of Essen was chosen, as it was part of the analysis of the 2014 Eurostat study. For each of these, EY either consulted their country subject matters experts or got directly in touch with representatives of these jurisdictions. The results of this analysis are detailed below. Next to that a summary of the differences between the approaches used by the two Member States and the City of Essen compared to the IPSAS 17 approach is provided in Annex 1.

3.5.1 France

The accounting guidance with respect to accounting for infrastructure assets is embedded in CGAS 6 "Tangible assets".

Definition of infrastructure assets

CGAS 6 does not define infrastructure assets, but classifies them as one of the classes and sub-classes of property, plant and equipment. The following categories[35] of infrastructure assets are outlined in the standard:

- Roads and motorways controlled by Central Government and the related structures;
- Dams controlled by Central Government and the related structures; and

32 See ESA 2010, para. 1.129.

33 See ESA 2010, para. 3.129 (f).

34 See ESA 2010, para. 3.86 (f) (2).

35 CGAS 6 para 1.6.

- Other infrastructures consisting of railways and related structures, network, signalling and telecommunication structures, port and airport facilities controlled by Central Government.

Recognition

The CGAS 6 requires application of the general recognition criteria[36] for property, plant and equipment also to infrastructure assets.

These require capitalization of initial costs if and only if:

- The tangible asset is controlled by Central Government; and
- Its cost or value can be measured with sufficient reliability.

The control criterion[37] is of particular importance when assessing the recognition criteria above. This is because, a large number of assets belonging to Central Government are transferred to other entities, which control the conditions of use of the assets and can derive economic benefit or service potential from them. Central Government assets that are under the control of any other public sector entities are recognized in the balance sheet of those entities and not in the balance sheet of Central Government.

Costs incurred after initial recognition[38] are capitalized if it is probable that future economic benefits or service potential will flow to Central Government, which is greater than the most recent assessment of the level of performance originally defined for the existing asset or defined when the expenditure is incurred. The difference compared to the original level represents an increase in the useful life of the asset, an expansion of its capacity, a decrease in the cost of use or a substantial improvement in production quality. In the case of roads and motorways, which are measured at depreciated replacement cost at the reporting date, subsequent expenditure relating to preventive maintenance or rehabilitation is considered to be of capital nature.

The following costs incurred after initial recognition are not capitalized: minor repairs, routine upkeep and maintenance and one for one replacement or restoration without improvement.

Measurement

The infrastructure assets are to be measured at cost (assets acquired in an exchange transaction) or at fair value (assets obtained in a non-exchange transaction) at initial recognition.[39]

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36 CGAS 6 para 1.2.

37 CGAS 6 para 1.2.

38 CGAS 6 para 1.5.1.

39 CGAS 6 para 2.1.1.

At the time of first-time adoption, if the historical cost was unknown and market value was not observable[40] for some specific assets such as road infrastructure, the depreciated replacement costs were used.

Subsequent measurement is done using the cost model[41], except for the roads, motorways, dams and related structures, which are measured at depreciated replacement cost[42] at the reporting date. This measurement basis considers the estimated replacement cost of an asset by a similar asset that would offer identical service potential.

The gross value is equivalent to the cost of constructing new assets after deducting an allowance for the estimated cost of restoring the existing assets at the reporting date. This calculated amount is compared to the carrying value at the reporting date.

The carrying value corresponds to the depreciated replacement cost at the previous reporting date increased, if applicable, by the amount of additions for the period and the change in the allowance for restoration costs since the last reporting date. The resulting positive or negative differences, if any, are recognized directly in net assets as revaluation difference.

The calculation of the depreciated replacement cost by the Member State France at first-time adoption of the new accounting framework is a practical example[43] demonstrating the use of a statistical model to perform the calculation. The first main assumption used in this model was the use of average kilometric ratios by category (road types, urban and interurban, etc.) determined based on expert knowledge on the values and the working practices and standards that were in place at the end of the 20th century. These ratios were applied to the length of the roads in the scope of the exercise to obtain the reconstruction/replacement cost. The second main assumption used in the model was the use of quality indicators, as per information available at the closing financial period, to assess the depreciation of the infrastructure, and thus get the depreciated replacement cost.

The component approach has not been applied to depreciate property, plant and equipment[44].

Disclosures

The CGAS 6 requires application of the general disclosure requirements[45] for property, plant and equipment also to infrastructure assets. These require disclosure of matters such as:

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40 CGAS 6 para 5.2.2.

41 CGAS 6 para 2.2.1.

42 CGAS 6 para 2.2.6.

43 See PwC, Collection of information ..., Brussels, 1 August 2014, page 102.

44 CGAS 6 para 1.4.

45 CGAS 6 para 4.1 and 4.3.

- The measurement basis used;
- The depreciation method used;
- The gross carrying amount;
- The accumulated depreciation at the end of the period; and
- A reconciliation of the carrying amount at the beginning and end of the period showing certain components thereof.

3.5.2 Austria

As Austria directly applies IPSAS, the Austrian accounting rule for property, plant and equipment is IPSAS 17.

Definition of infrastructure assets

IPSAS 17 is applied and in this standard no definition of infrastructure assets is given. The standard rather summarizes the main characteristics and provides some examples. Infrastructure assets are deemed to meet the definition of property, plant and equipment and should as such be accounted for following the same rules as set out for all property, plant and equipment.

The Austrian accounting rule does divide the infrastructure assets into categories for financial reporting presentation purposes. The infrastructure assets are included under the "land, properties and property facilities", which are presented in the statement of financial position as a sub-category of property, plant and equipment.

This sub-category is further broken down in the notes to the financial statements and includes the following categories linked to infrastructure assets:

- Category 1: streets, roads, trails, squares, bridges, tunnels, rails and airfields;
- Category 2: water supply and water disposal systems.

Recognition

The IPSAS 17 initial recognition criteria are applied. It is to be noted however that railways and major roads are not controlled by government but by government-owned entities with a private legal form (in the following: private legal entities). As a result, these infrastructure assets are accounted for by these private legal entities and not by government as no consolidated financial statements are prepared yet.

Subsequent costs are capitalized if they prolong the infrastructure asset's useful life or add functionality. If this is not the case, subsequent costs are expensed.

Measurement

Infrastructure assets are measured at cost at initial recognition. The cost model is afterwards applied for subsequent measurement purposes. Infrastructure assets are depreciated; however the component approach is not applied.

Different rules were applied at first-time implementation. If at that time the historical cost of infrastructure was unknown, the depreciated replacement cost was used instead. No

statistical model was used to calculate this depreciated replacement cost given the limited scale of the exercise and the fact that major roads and railways are not considered. Next to that, two pragmatic approaches[46] were used to reduce the administrative burden:

- Land raster method: all registered plots of land were measured using the price per square meter based on the data kept by the tax agency. The historical data derived from this was used to calculate the average price of certain plots of land. This value was then reduced to consider the fact that some areas are of limited use (e.g. bodies of water, alpine lands, military lands, etc.). For example, an 80% reduction was applied to mountains and wetlands;
- Land improvements method: roads, railways, airports and port facilities were measured at depreciated cost or based on specified reference values or average values determined based on neighbouring countries (i.e. Germany) or literature sources. For roads, a value reduction was applied to the replacement cost to obtain the depreciated replacement cost. This adjustment was based on current road condition: poor (90% reduction); medium (30% reduction); or good (10% reduction).

Disclosures

Next to the disclosure requirements applicable to all property, plant and equipment the Austrian financial statements present information on a disaggregated level. The movement of the year in infrastructure assets is, for example, presented in a tabular format for each of the categories of infrastructure assets. These movements are explained in qualitative notes to the financial statements.

3.5.3 The City of Essen

The City of Essen applies the requirements of the so-called "Gemeinde-haushaltsverordnung"[47] to its infrastructure assets. In addition to that, the inventory guideline of the City of Essen contains specific requirements for infrastructure assets.

Definition of infrastructure assets

The accounting guidelines do not contain a definition of infrastructure assets. The only specification included is a list of examples of assets, which fall under the category infrastructure assets. Next to that, a structure is provided breaking down the infrastructure assets in the following categories:

- Property (land) related to infrastructure assets;
- Bridges and tunnels;
- Railways with equipment and security systems;

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46 See PwC, Collection of information ..., Brussels, 1 August 2014, page 102.

47 "Gemeindehaushaltsverordnung" is the binding legal document for local governments in a state in Germany containing relevant regulations mainly for budgeting, accounting and reporting. The term can be translated as "communal budget ordinance".

- Sewage and de-watering drains;
- Road network with paths, squares and traffic coordination systems; and
- Other buildings of infrastructure assets.

Recognition

The City of Essen did not define specific recognition criteria for its infrastructure assets but rather applies the general asset recognition criteria.

For the differentiation between repairs, maintenance and expenses of a capital nature the "Gemeindehaushaltsverordnung" follows the Commercial Code ("HGB")/tax accounting regulation. In addition, commentaries (e.g. "Neues Kommunales Finanzmanagement in Nordrhein-Westfalen, Handreichung für Kommunen, 6. Auflage") provide further guidance on how to handle the differentiation. In practice, according to practical experiences reported, the accounting for subsequent expenditure remains however an on-going challenge since it is sometimes found difficult to differentiate between repairs, maintenance and expenses of a capital nature.

Measurement

Infrastructure assets are initially measured at cost. Specific measurement rules were applied in the opening balance sheet at first-time implementation. All infrastructure assets were at that point measured using a "cautiously estimated fair value". The road networks valuation considered the value of the different layers of the road according to their remaining quality after use (i.e. shape of the roads).

There are only two exceptions to this measurement rule:

- Property (land) related to infrastructure assets: no documentation was in place and a fixed amount per square metre was used in the valuation that varied depending on its location; and
- Signals, marking and street furniture (for example benches): representative parts of the road were considered and the signals, marking and street furniture on them was counted over a length of one kilometre for representative pilot streets. Afterwards the acquisition cost of these items was extrapolated to the whole road network.

The amounts that were determined in the opening balance sheet were deemed to be the cost and in subsequent measurement the cost model was applied. The infrastructure assets are depreciated except for the property (land). The component approach is not fully applied. The City of Essen does however split infrastructure assets into components (such as layers of the streets) if this is due to differing useful lives or when there are specific requirements. There are cases where public sector accounting in Germany follows tax accounting rules which requires further breakdowns of assets into components (e.g. for houses into different components such as elevators, and other so-called "Betriebsvorrichtungen" (operating facilities) with shorter useful lives). However, the component approach as such is not known in German public sector accounting and is not applied for all kinds of infrastructure assets.

Two measurement reliefs to reduce the administrative burden have been authorized:

- Street lighting, street signs, roadside greenery, street furniture: fixed amounts are used based on the same principle as explained above; and
- Values for infrastructure assets that were calculated for the purpose of defining fees and charges are allowed to be used for financial reporting purposes.

Disclosures

- There are no specific disclosure requirements for infrastructure assets. The accounting policies define the measurement relief approaches used irrespective of the type of assets. The notes disclose a property, plant and equipment movement schedule in which the categories of infrastructure assets are clearly separately disclosed. No qualitative disclosures (e.g. the measurement basis or the depreciation method used) are provided per category of infrastructure assets.

4. Discussion of matters relevant for a European harmonization

The following matters relevant for a European harmonization are addressed:

- Taking stock of infrastructure assets (4.1.);
- Problematic points/issues that can arise with regards to definition, recognition, measurement and disclosures (4.2.);
- Financing of infrastructure assets (4.3.);
- Impairment of infrastructure assets (4.4.);
- Service concession arrangements (4.5.);
- Advantages and disadvantages of the existing approaches to recognition and measurement (4.6.);
- The need for supplementary guidance to what is currently foreseen under IPSAS and the format of that guidance (4.7.);
- The consequences for a possible convergence between IPSAS and ESA (4.8.).

4.1 Taking stock of infrastructure assets

Member States, which do not have an inventory of infrastructure assets in place face the challenge of stock-taking at the date of first-time implementation. It is crucial that Member States at this point also collect information needed to measure the asset (for example the relevant data that is needed for the calculation of cost less depreciation, for determination of fair value or the data that is needed for the componentization of the asset in compliance with the IPSAS 17 component approach). This implies that Member States should have already determined which measurement approach they will apply at the time of the stock-taking (e.g. whether they follow a deemed cost approach, whether they will follow a component approach and also how detailed the assets should be broken down into components (for example roads)). When cost information is not available at first-time adoption, measurement of fixed assets can be a challenge in practice and the importance cannot be underestimated, as not collecting this information at first-time adoption will result in many inefficiencies and additional costs in the measurement process.

4.1.1 The stock-taking process

The City of Essen's practical experience demonstrates that taking stock can be a challenge. 6.5 full-time equivalents worked for 3.5 years to set-up a stable database with an inventory of fixed assets (especially infrastructure assets). This effort represents a third of the city's total effort to implement accrual accounting[48]. It has to be noted that this included the physical inventory of the fixed assets, which is a major part of those efforts.

48 See PwC, Collection of information ..., Brussels, 1 August 2014, page 63. However, it has to be considered that in case the City of Essen would have already had inventories, then the time needed to set up the asset accounting system would have been shorter.

The representative of the City of Essen highlighted during the interview the following main difficulties encountered in the process:

Roads	► Determination of the surface of the roads based on land cadastre data; ► Identification of the surface of the roads based on the identified land; ► Identification of the items related to roads (e.g. boundaries of roads, traffic lights, sidewalks); and ► Determination of the quality of roads for subsequent measurement.
Land	► Determination of the economic ownership of land; ► Determination subsurface items (e.g. car parks, district heating system).
Sewage and de-watering drains	Determination of the ownership raised problems; moreover no data on the canal system was available.
Traffic lights, roadside vegetation, trees and other lighting	This was problematic since these are a mass phenomenon.

Table 1: Difficulties encountered by the City of Essen in developing an inventory of infrastructure assets

To conclude, taking stock of all infrastructure assets by a jurisdiction can be a time-consuming and complex undertaking. However, it is a crucial hurdle to take by each Member State when transitioning to accrual based accounting/IPSAS and to get a complete overview of all their infrastructure assets. Stock-taking of all infrastructure assets is a necessary condition for a better management of assets, such as a better maintenance, more appropriate replacement policies or the identification and disposal of surplus assets. This view is confirmed by the EPSAS Cell on First Time implementation, which has recommended in its draft final report [49] to perform comprehensive stock-taking of assets including infrastructure assets.

4.1.2 Componentization of infrastructure assets

The component approach would for example require a road to be divided in components based on the layers of that road. This componentization has to be done at the date of first-time implementation and subsequently each time an asset is acquired except for the case that the exemption in IPSAS 33 is used. According to IPSAS 33.36 where a first-time adopter has not recognized assets and/or liabilities under its previous basis of accounting, it is not required to recognize and/or measure the following assets and/or liabilities for reporting periods beginning on a date within three years following the date of adoption of

49 See EPSAS, Cell on First Time Implementation: Draft Final Report, EPSAS WG 16/02, Luxembourg, 16 June 2016, page 9 and annex 1.

IPSASs. This exemption is applicable to IPSAS 17. Therefore, during the transitional period the component approach would not have to be applied. However, it has to be noted that the use of the exemption affects fair presentation and compliance with IPSASs during the period of transition. When the transitional period of 3 years ceases then a first-time adopter would have to apply the component approach.[50] It is possible that the first-time adopter applies IPSAS 17 before the end of the transitional period. In that case, also the component approach would have to be applied.

In our view, the component approach is generally feasible in practice given the fact that many governments already apply the concept (without naming it "component approach") as well as private sector entities worldwide apply the approach. It can however not be neglected that the component approach is time-consuming, cumbersome and can be an administrative burden. For this reason, France and Austria decided not to apply the approach.

The case of the City of Essen showed that infrastructure assets are split into components (such as layers of the streets) if this is due to differing useful lives or when there are specific requirements. Nevertheless, the component approach is not applied for all kinds of infrastructure assets.

Whether or not the component approach should be a requirement for infrastructure assets is to be discussed considering its advantages and disadvantages.

In EY's view these advantages and disadvantages are as follows:

	Application component approach	Component approach not applied
Faithful representation of the statement of financial position	Each component will be depreciated over its specific useful life resulting in a faithful representation of the infrastructure assets' net book value in the statement of financial position.	The full asset will be depreciated over the useful life of the main component and as such may not result in a faithful representation of the infrastructure assets' net book value in the statement of financial position in cases of multi-component assets with heterogeneous components.
Comparability	Comparability achieved if all Member States apply the component approach. However, there can be discretion in defining	Comparability achieved if none of the Member States apply the component approach.

50 If a first-time adopter's depreciation methods and rates in accordance with its previous basis of accounting differ from those that would be acceptable in accordance with IPSASs and if those differences have a material effect on the financial statements, then IPSAS 33 suggests that the entity adjusts accumulated depreciation in its opening statement of financial position retrospectively so that it complies with IPSASs. See IG53 of IPSAS 33.

	components. Furthermore, useful lives of components might vary between entities due to entity-specific circumstances (e.g. climate, differing construction approaches).	
Cost versus benefit*	Higher implementation cost	Lower implementation cost
Ease of application*	More complex to apply in practice due to volume, complexity etc. of assets.	Easy to apply

	Advantage
	Disadvantage
	Neutral

Table 2: Advantages and disadvantages of the use of the component approach

* In EY's view, the implementation cost and application complexity can be reduced by applying thresholds in accordance with the materiality principles in IPSAS. Components would only be treated separately if they, for example, make up 10% of the total asset value.

4.2 What are the problematic points/issues with regards to definition, recognition, measurement and disclosure of infrastructure assets?

In the following table an indication is made of whether the Member States and the city analysed follow the IPSAS 17 requirements or rather deviate from them. This was used as a basis to define the problematic points/issues to be considered in this issue paper.

	France	Austria	City of Essen	Problematic point/issue
Definition of infrastructure assets	Supplement to IPSAS 17 - categorization	Supplement to IPSAS 17 - categorization	Supplement to IPSAS 17 - categorization	4.2.1.
Recognition	In line with IPSAS 17	In line with IPSAS 17	In line with IPSAS 17	4.2.2.
Measurement	Deviation from IPSAS 17 noted – component approach	Deviation from IPSAS 17 noted – component approach	Not entirely in line with IPSAS 17 – partial application of component approach	4.2.3.
Disclosures	Supplement to IPSAS 17	Supplement to IPSAS 17	Supplement to IPSAS 17	4.2.4.

	National framework deviates from IPSAS 17
	National framework provides additional guidance compared to IPSAS 17
	National framework does not deviate from IPSAS 17

Table 3: Differences between national public sector accounting frameworks accounting treatment and IPSAS 17

4.2.1 Problematic point/issue 1 - Categorization of infrastructure assets on the face of the statement of financial position

IPSAS does not require to break down infrastructure assets into categories at the face of the statement of financial position[51]. However, IPSAS 17 refers to examples of infrastructure assets. In addition, IPSAS 1.89 provides that additional line items, headings, and sub-totals shall be presented on the face of the balance sheet when such presentation is relevant to an understanding of the entity's financial position. Entities with significant infrastructure assets on their balance sheet would therefore be required to present additional line items on infrastructure assets. The Member State Austria and the City of Essen both categorize their infrastructure assets at the face of the statement of financial position. The Member State France also categorizes its infrastructure assets but in the notes to its financial statements.
A summary is provided in the figure below:

[51] IPSAS 1 "Presentation of financial statements", paragraph 88.

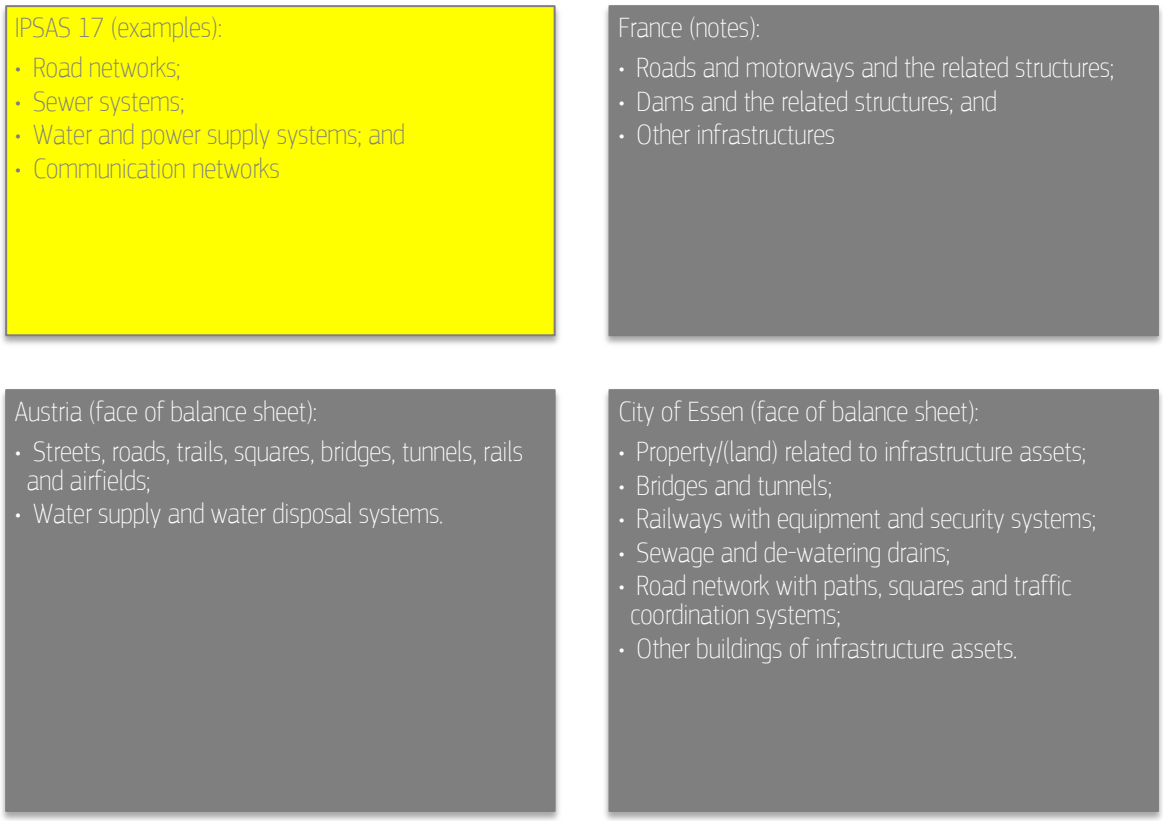

Figure 2: Categorization of infrastructure assets in the different accounting frameworks

The City of Essen's accounting rules are the only national public sector accounting framework analysed that categorizes its infrastructure assets at the face of the statement of financial position in a more detailed manner than the examples provided by IPSAS 17. The other two Member States remain at a similar level of categorization or even go into fewer details than IPSAS 17.

In EY's view Member States need to discuss based on their understanding of user´s needs whether the IPSAS requirements on the presentation of infrastructure assets in the statement of financial position should be made more specific for infrastructure assets. It should be discussed whether the information provided following the current IPSAS 17 disclosure requirements is sufficient or whether disaggregation on the face of the statement of financial position would be needed since:

- Information on the extent, structure of and investments into infrastructure assets provides a view on the capacity and capability of an entity. Therefore, it might be useful for an investor's assessment to have more details on specific types of property, plant and equipment; and
- Infrastructure assets are also often a significant portion of the total assets and inclusion under the property, plant and equipment line item may distort the face of the balance sheet;
- It can also be useful for citizens' assessments of investments into infrastructure assets to have the amount of infrastructure assets presented as a sub-category of the property, plant and equipment.

Also further disaggregation of infrastructure assets in the notes could be a matter for discussion.

4.2.2 Problematic point/issue 2 - Recognition of infrastructure assets

In terms of recognition criteria and recognition rules for subsequent expenditure, the national public sector accounting frameworks analysed are in line with the IPSAS 17 requirements. However, it is noted that the frameworks provide more guidance than what is currently included in the IPSAS standard. More details are provided below.

4.2.2.1 Recognition criteria

The national public sector accounting frameworks analysed each require application of the general recognition criteria for property, plant and equipment also to infrastructure assets. The recognition criteria outlined in these frameworks are in line with the IPSAS 17 criteria.

It was however noticed that the Member State France provides additional guidance on how to define economic ownership of infrastructure assets. In practice it can for example occur that governments own railway tracks, whereas a private sector entity operates the trains. This could lead to a discussion on whether the government or rather the private sector operator has the economic ownership.

To reduce the complexity of deciding about the economic ownership of infrastructure assets, the French accounting rule provides more guidance on how to apply the control criterion that indicates economic ownership and requires, if met, the recognition of an asset.

4.2.2.2 Subsequent expenditure

IPSAS 17 requires a differentiation to be made between repairs and maintenance versus expenses of a capital nature. In practice[52] this is often pointed out as difficult to apply. In the national public sector accounting frameworks analysed it was noted that often additional guidance to the currently foreseen guidance in IPSAS 17 is provided. The Member State France has provided more guidance in its accounting standard on how to define whether subsequent expenditure is of a capital nature and has included separate guidance on how to treat subsequent expenditure if the depreciated replacement cost is used. The representative of the Member State Austria has pointed out in the interview that in practice it is helpful to focus on whether these costs prolong the useful life of the asset or add functionality. If this would not be the case, the subsequent costs are deemed not to be of a capital nature.

52 Interview representative City of Essen and IPSASB Agenda Item 4, September 2014, Brussels meeting, question 8 respondent comment 14.

4.2.3 Problematic point/issue 3 – Measurement

Some problematic points/issues were noted when comparing the national public sector accounting frameworks with the IPSAS framework, dealing with both initial and subsequent measurement. Each problematic/point issue is further described below.

4.2.3.1 Initial measurement

The initial measurement provisions under IPSAS 17 (acquisition cost) can be applied to infrastructure assets without difficulties. This however does not imply that measurement at first-time implementation is equally straightforward. Irrespective of the accounting framework applied each of the entities analysed highlighted the complexity of measuring the historic cost at first-time implementation. In order to overcome this hurdle, the Member States and city elected to measure the respective assets at a current value and use that value as the deemed cost.[53] Since reliable market-based evidence of current value was considered not to be available by France and Austria, depreciated replacement cost were used[54]. The City of Essen used a "cautiously estimated fair value" as deemed cost.

4.2.3.2 Subsequent measurement

The analysed national public sector accounting frameworks subsequently measure their infrastructure assets using the cost model. In EY's view, considering that there is a lack of an active market, the alternative revaluation model of IPSAS 17 will imply an estimation/valuation model to be used. It should be explored by Member States whether the option in IPSAS 17 to use either the cost or the revaluation model should be limited to the cost model from a practical point of view.

The application of the component approach for measurement purposes is an additional deviation by the national public sector accounting frameworks from IPSAS 17. Both France and Austria do not apply this approach and the City of Essen partially applies this approach. No further details are provided in respect of this deviation since this has already been discussed under section 4.1.2.

4.2.4 Problematic point/issue 4 – Disclosures

There is a view[55] that the disclosure requirements in IPSAS 17 are insufficient for infrastructure assets. Infrastructure assets are part of a network delivering essential services. Disclosures of condition assessments and maintenance backlogs are necessary for accountability purposes, so that users can assess whether the entity is able to provide essential services in the future. The rationale for additional disclosures is enhanced if it is decided that different depreciation requirements should be applied to such assets.

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53 IPSAS 33 "First-time adoption of accrual basis IPSASS", paragraph 64.

54 IPSAS 33 "First-time adoption of accrual basis IPSASS", paragraph 70.

55 IPSASB Agenda Item 10, March 2015, Santiago Chile meeting, key issue 4

In EY's view, this issue has to be carefully considered as to avoid a disclosure overload. The disclosures mentioned above should only be required if perceived useful by the readers of the financial statements.

In any case, it can be of use in EY's opinion to disclose the property, plant and equipment movement schedule separately for infrastructure assets and their sub-categories since this can be of relevance for management purposes, parliamentarians, etc.

4.3 Financing of infrastructure assets

Infrastructure assets are often financed through grants. The accounting treatment of such transactions is outlined in IPSAS 23[56]. Certain conditions, for example the construction of a road, are usually linked to these grants. As long as the conditions are not fulfilled, e.g. the asset has not been constructed, the recipient has a performance obligation (to fulfill the conditions, i.e. to build the road). In case the conditions are breached, this performance obligation turns into a financial liability (i.e. the obligation to return the grant). As soon and as far as the performance obligation is satisfied (i.e. the road is built), the recognized liability is released in surplus or deficit by recognizing revenue.

The IPSASB is looking in its current project on "Revenues" especially at the aspect of "upfront grants" or "pre-financing" for/of assets in cases without a clear condition (including return obligations). The IPSASB is acknowledging that in some cases this strict requirement, which precludes allocating the revenues over the period of depreciation, might lead to an inappropriate presentation of the financial situation of an entity. In such a case the cost for the asset is over the period of its use (leading ceteris paribus to a deficit) whereas the grant/revenue has to be recognized after the asset has been built (at the beginning, leading ceteris paribus to a surplus in that period). Therefore, the IPSASB considered to use "other resources/other obligations" to come to an allocation of those revenues.

EU Accounting Rule 5 prescribes the accounting treatment of pre-financing transactions of EU institutions and bodies. Pre-financing is a transfer of cash and is given in advance of the project to be financed. The Accounting Rule specifies that if the recipient does not incur eligible expenditures, he has the obligation to return the pre-financing advance to the EU institution or body. This right or claim of the EU entity towards the beneficiary is shown as an asset. With regards to the recipient EU Accounting Rule 17: Revenue from Non-Exchange Transactions (Taxes and Transfers) uses the same recognition principles for revenues as for transfers in IPSAS 23.

There are regulations in Member States where entities have to recognize the liability described above at the beginning of lifetime of the related asset irrespective of the fact whether a condition is attached to the grant or not. The liability is then decreased over this period (following the depreciation of the asset) resulting in a revenue recognition over time instead of at a point in time (fulfillment of the condition) as required by IPSAS 23. Through the use of this accounting treatment, the surplus or deficit effect of the grant is

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56 IPSAS 23 "Revenue from non-exchange transactions", paras. 17 and 77.

neutralized since the depreciation of the related asset is offset by the revenue from allocating the liability over the useful asset life.

In this context the City of Essen encountered a range of difficulties at first-time adoption:

- The collection and determination of the relevant grant approval letters for the relevant measurement period was challenging; and
- The allocation of grants to respective investments/infrastructure assets (e.g. road construction grants, connection grants) was very complicated for roads. Therefore, a proportional allocation was performed.

Given the current practical problems with accounting for transfers under IPSAS 23 and the IPSASB's current project on Revenues we would suggest to closely follow the IPSASB's discussions on accounting for grants in the context of the revenue project. Given the practical importance of that issue and the fact that the IPSASB will issue a Consultation Paper in the first half of 2017, the EPSAS project should await the publication of the Consultation Paper and then decide on the way forward.

4.4 Impairment of infrastructure assets

To determine whether an item of property, plant and equipment is impaired, IPSAS 21 "Impairment of non-cash generating assets" or IPSAS 26 "Impairment of cash generating assets" is to be applied as appropriate[57]. Therefore, IPSAS 21 and 26 also apply to infrastructure assets.

Given the fact that most of the infrastructure assets are held for service delivery purposes rather than with the primary objective of generating a commercial return infrastructure assets are non-cash generating and, therefore, IPSAS 21 applies to them.[58]

According to this standard, an impairment[59] will occur if:

Carrying amount of the asset > recoverable service amount

Recoverable service amount
= (higher of)
Fair value less cost to sell and value in use

Figure 3: Impairment of infrastructure assets as per IPSAS 21

57 IPSAS 17 "Property, plant and equipment", paragraph 79.

58 IPSAS 21 "Impairment of non-cash generating assets", paragraph 20. It has to be noted that the impairment requirements and the approach of IPSAS 21 and IPSAS 26 are rather similar.

59 IPSAS 21 "Impairment of non-cash generating assets", paragraph 25 and 35.

Application of the impairment guidelines under IPSAS to infrastructure assets may require judgment.[60] In EY's view, judgment will be required to identify impairment and to measure the recoverable service amount.

4.4.1 Identification of impairment

IPSAS 21 defines primary impairment indicators[61], which if any of those is met requires the entity to perform an impairment test, and secondary impairment indicators[62], which are less strong. These indicators have been summarized in the table below:

Primary indicators	Secondary indicators
External indicators: ► Cessation, or near cessation, of the demand or need for services provided by the asset; ► Significant long-term changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, legal, or government policy environment in which the entity operates; Internal indicators ► Evidence of physical damage of an asset is available; ► Significant long-term changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which an asset is used or is expected to be used; ► A decision to halt the construction of the asset before it is complete or in a usable condition; and ► Evidence is available from internal reporting that indicates that the service performance of an asset is, or will be, significantly worse than expected.	► During the period, an asset's market value has declined significantly more than would be expected as a result of the passage of time or normal use; ► A significant long-term decline (but not necessarily cessation or near cessation) in the demand for or need for services provided by the asset.

Table 4: Primary and secondary IPSAS 21 impairment indicators

60 IPSASB Agenda Item 4, September 2014, Brussels meeting, question 8 respondent comment 14 and PwC, Collection of..., Brussels, 1 August 2014, page 139.

61 IPSAS "Impairment of non-cash generating assets", paragraph 27.

62 IPSAS "Impairment of non-cash generating assets", paragraph 29.

In practice, there are a range of indicators that need to be considered given the large amounts of infrastructure assets jurisdictions have under their control. In EY's view the discussion should focus on whether it is feasible and solutions such as the shortening of the list of impairment indicators should be explored. For example, the Member State France has only retained two indicators in its property, plant and equipment accounting rule:

- Significant deterioration in the physical condition of the asset caused by exceptional circumstances (for example, terrorist attacks, flooding, etc.) which prevents normal use of the asset; and
- Evidence of technical obsolescence caused by an event preventing the normal use of the asset in the short term.

4.4.2 Measuring the recoverable service amount

An entity does not necessarily have to measure both the fair value less costs to sell and the value in use.[63] If either of these amounts exceed the carrying amount, the asset is not impaired, and it is not necessary to estimate the other amount.
The fair value less costs to sell[64] and/or value in use are to be measured as follows:

Fair value less cost to sell	Value in use
► Best evidence to determine fair value less cost to sell is the price in a binding sales agreement; ► If this information is not available and the asset is traded in an active market, the market price less costs of disposal will be the fair value less costs to sell; ► If this information is also not available, the fair value less costs to sell will be based on the best information available to reflect the amount that an entity could obtain, at reporting date, from the disposal of the asset.	The value in use is the present value of the asset's remaining service potential and can be measured using any of the following three approaches: ► Depreciated replacement cost: cost to replace the asset's gross service potential depreciated to reflect the asset in its used condition; ► Restoration cost: cost of restoring the service potential of an asset to its pre-impaired level; ► Service units approach: reducing the current cost of the remaining service potential of the asset before impairment to conform with the reduced number of service units expected from the asset in its impaired state.

Table 5: Methods to measure the recoverable service amount

In EY's view, considering that for infrastructure assets there is a lack of an active market, determining the fair value less costs to sell of infrastructure assets will be complex requiring the use of estimation/valuation models. In EY's view it should therefore be explored whether the option provided to measure the recoverable service amount at the higher of the fair value less costs to sell and value in use can be limited to just determine

63 IPSAS 21 "Impairment of non-cash generating assets", paragraph 36.

64 IPSAS 21 "Impairment of non-cash generating assets", paragraph 40, 41 and 42.

the value in use from a practical point of view. It could also be discussed whether infrastructure-specific impairment approaches (e.g. for streets) should be developed.

4.5 Service concession arrangements

A service concession arrangement is defined in IPSAS 32[65] as a binding arrangement between a grantor and an operator in which:

- The operator uses the service concession asset[66] to provide a public service on behalf of the grantor for a specified period of time; and
- The operator is compensated for its services over the period of the service concession arrangement.

Governments often grant infrastructure assets to an operator that operates them on behalf of the government and is compensated for this. In these cases IPSAS 32 applies.

The PwC Report[67] performed in 2014 shows that 20 Member States hold infrastructure assets under service concession agreements. These Member States would need to recognize the asset in their statement of financial position if IPSAS[68] is applied and if they:

- Control or regulate the services the operator must provide with the asset, to whom it must provide them, and at what price; and
- Control any significant residual interest in the asset at the end of the term of the arrangement.

The Eurostat study however concludes that only 8 out of these 20 Member States recognize an asset in their statement of financial position using the IPSAS 32 rules. This reflects a significant gap inside the EU in the application of IPSAS 32 to infrastructure assets under service concession arrangements and demonstrates the importance of also considering this topic when discussing the accounting treatment of infrastructure assets.

4.6 What are the advantages and disadvantages of the existing approaches to recognition and measurement?

In EY's view, the property, plant and equipment recognition criteria can be applied to infrastructure assets. Therefore, no discussion of the advantages and disadvantages of the existing approaches regarding the recognition of infrastructure assets is performed here.

The existing approach to initial measurement is also clear. The asset will be measured at its cost when acquired in an exchange transaction and at fair value when obtained in a non-exchange transaction. The existing approaches to subsequent measurement however are

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65 IPSAS 32 "Service concession arrangements: grantor", paragraph 8.

66 Service concession assets are typically non-current tangible or intangible assets used for administrative purposes in delivering public services. See IPSAS 32.AG 4 for examples.

67 See PwC, Collection of information ..., Brussels, 1 August 2014, page 104.

68 IPSAS 32 "Service concession arrangements: grantor", para. 9.

subject to discussion. IPSAS 17 allows the use of the cost or the revaluation model for subsequent measurement.

The advantages and disadvantages of each model are described in the table below:

	Cost model	Revaluation model
Faithful representation of the statement of financial position	Faithful representation is endangered due to the lack of yearly indexation. For example, an asset acquired 20 years ago has a different cost value compared to the cost at the reporting date.	Faithful representation is endangered, as there is often no active market for infrastructure assets. Therefore, in practice revaluation would require the use of valuation models.
Comparability	Comparability among Member States can be problematic as price developments are not reflected.	Comparability might be limited since Member States may use different valuation models and/or inputs to these models.

	Cost model	Revaluation model
Cost versus benefit	Low implementation cost	Higher implementation cost
Ease of application	Easy to apply	More complex to apply

	Achieved
	Not entirely or not achieved

Table 6: Advantages and disadvantages of the use of the cost or revaluation model for subsequent measurement

4.7 Need for supplementary guidance to what is currently foreseen under IPSAS and format of that guidance

The question to be raised is whether a separate standard on infrastructure assets is needed under EPSAS or whether additional guidance should be included in the EPSAS standard on property, plant and equipment.

In EY's view, the general accounting requirements under IPSAS 17 for property, plant and equipment can be applied to infrastructure assets. However, we do believe that supplementary guidance is needed either in the form of a standard or a separate interpretation document.

This supplementary guidance should in EY's view cover the following matters:

- Componentization of infrastructure assets at initial recognition: more guidance on the application of the component approach can be useful to reduce diversity in practice. The discussion on the need for more guidance should also reflect on the need to introduce application thresholds to limit the application of the component approach to

material cases. If more guidance would be considered under EPSAS, the advantages and disadvantages listed in section 4.1.2 should be taken into account;
- Economic ownership of infrastructure assets: determining the economic ownership of infrastructure assets can be complex as described in section 4.2.2.1. Additional guidance as for example provided in the French accounting rule can be useful;
- Recognition of subsequent expenditures: additional guidelines can be provided considering the difficulties perceived by Member States currently applying IPSAS to differentiate between repairs, maintenance and expenses of a capital nature;
- Accounting for grants used to finance infrastructure assets: financing of infrastructure assets can involve different layers of government and resulting accounting might be complex. Given that there is an interplay between accounting for infrastructure assets and grant financing additional guidance would be helpful;
- Impairment: monitoring impairment for infrastructure assets can be cumbersome. To smoothen this process, impairment indicators tailored to this specific type of asset would be helpful. If specific impairment indicators for infrastructure assets would be considered under EPSAS, possibly further guidance would be needed;
- Disclosures: the need for additional disclosure requirements is emphasized in section 4.2.4.

Next to the above, in EY's view, it should be considered whether the following options currently provided under IPSAS could be narrowed down:

- The option in IPSAS 17 to apply either the cost or the revaluation model: the discussion on narrowing down this option can be conducted based on the advantages and disadvantages listed in section 4.6; and
- The option in IPSAS 21 to measure the recoverable service amount at the higher of fair value less cost to sell and value in use: the discussion on narrowing down this option should consider that the lack of an active market makes the determination of the fair value complex as described in section 4.4.

With regards to service concession arrangements, EY is of the view that due to complexity this issue needs to be separately discussed in an issue paper..

4.8 What are the consequences for a possible convergence between IPSAS and ESA?

As has been shown in section 3.4, under ESA infrastructure assets are recorded on the balance sheet as part of the "fixed assets" (AN.11) category. Hence, since IPSAS also recognizes infrastructure assets on the balance sheet, both ESA and IPSAS will show infrastructure assets on their respective balance sheets.

The main difference between ESA and IPSAS stems from the diverging impacts of infrastructure assets on their respective surplus/deficit calculations, i.e. on the income statement under IPSAS and on the net lending(+)/borrowing(-) under ESA. Under ESA rules, acquisitions (or constructions) of fixed assets are recorded as capital expenditures within surplus/deficit in the period of acquisition. Since they are recorded within surplus/deficit for their full amount in the year of acquisition, their impact on government deficit is described as a "one-shot" impact. The same holds true for capital grants under ESA. They are also going directly into surplus or deficit.

In contrast, under IPSAS, the surplus/deficit impact only appears over time, namely through yearly depreciation expenses and/or impairments. Yearly depreciation expenses might be off-set by corresponding revenues based on the derecognition of performance obligations related to capital grants.

A further major difference between IPSAS and ESA is that ESA does not follow an individual asset measurement approach, but rather a group or portfolio valuation approach is followed. A further difference with respect to measurement is impairment. As outlined before the concept of impairment is not used under ESA and as such no regular impairment assessments are allowed.

The figure below illustrates this difference in impact on surplus/deficit under both systems using the example of an acquisition of infrastructure asset for a cost of 10 M€ and a useful life of 5 years. As can be seen in the figure, the impact on government deficit is a "one-shot" in year 0 under ESA 2010 whereas it is spread over the asset's useful life under IPSAS:

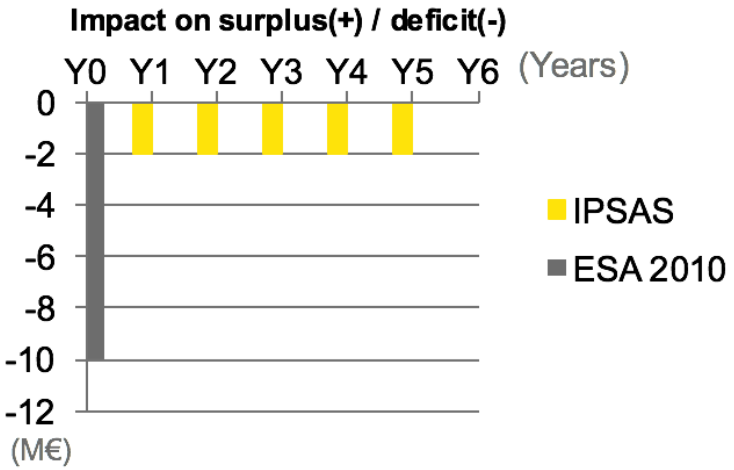

Figure 4: Impact of infrastructure acquisition under IPSAS and under ESA

Finally, as regards to a possible convergence between IPSAS and ESA, the analysis shows that convergence can be achieved at the level of the balance sheet recordings but not at the level of the surplus/deficit calculation. In fact, by choosing the revaluation model for infrastructure assets under IPSAS, this would in principle ensure convergence at balance sheet level since in this case IPSAS and ESA would both use current value approaches for measuring infrastructure assets in the balance sheet. However, because of the difference in the treatment of capital expenditures under IPSAS and ESA (see above), convergence cannot be achieved at the level of the surplus/deficit calculation.

5. Develop an approach for organizing the future discussion on infrastructure assets with the EPSAS stakeholders

In EY's view, the general accounting requirements under IPSAS 17 for property, plant and equipment can be applied to infrastructure assets. However, through the analysis performed for this paper it was noted that practical application difficulties do exist. In this issue paper options for additional guidance and reducing the current options in IPSAS 17 are listed as matters for discussion with EPSAS stakeholders, which can help to overcome these difficulties. The following table can be used to facilitate these discussions:

	Practical application difficulties	**Matters for discussion with EPSAS stakeholders**
Definition	No categorization is made on the face of the statement of financial position.	The need for categorization on the face of the statement of financial performance is a matter for discussion considering the following pros and cons: (-) Distortion of the face balance sheet as potentially the most significant assets are included in the property, plant and equipment line item. (-) Limited information value for citizens, management purposes, parliamentarians, investors, etc. (+) No risk for disclosure overload If categorization on the face of the statement of financial position would be considered, additional guidance will be needed.
Recognition	No guidance is included in the property, plant and equipment accounting standard on how to determine the economic ownership of infrastructure assets. However, this can be complex in cases where the asset is owned by another entity as the one operating the asset.	The possibility to include additional guidance to support entities in making the economic ownership assessment can be explored. The French accounting rule can be taken as an example of how this guidance could look like.
	At the time of initial recognition, the infrastructure assets are to be divided in components (e.g. component approach):	Whether or not the component approach should be applied to all infrastructure assets is a matter for discussion considering the following pros and cons of the component approach: (-) Time-consuming (-) High implementation cost (-) Complex to apply

		(+) Faithful representation of the statement of financial position If it is concluded that the component approach should be applied, additional guidance is recommended due to the complexity of the approach for infrastructure assets and to avoid diversity in practice. The introduction of application thresholds is to be considered as this can reduce the application complexity.
	Subsequent expenditure is to be divided into items of a capital nature and items to be accounted for in surplus or deficit. During the analysis performed for this issue paper it was noted that in practice this can be complex when applied to infrastructure assets.	The possibility to include additional guidance to support entities in making this analysis can be explored. The French accounting rule can be taken as an example of how this guidance could look like.
Measurement	Subsequent measurement can be done using the cost model or the revaluation model. The revaluation model can be complex to apply to infrastructure assets due to the absence of an active market. This will result in Member States being required to set-up estimation/valuation models to perform the yearly revaluation.	Considering the advantages and disadvantages of both models listed in this issue paper, it is to be explored whether the current option to use the revaluation model can be removed from a practical point of view.
Disclosures	The general property, plant and equipment disclosure requirements are to be applied to infrastructure assets. No disaggregation of infrastructure assets in the notes is to be made. Practical difficulties therefore exists with regards to appropriate guidance on categorizing infrastructure assets for the notes.	Given the significance of infrastructure assets in the public sector, the need for a disaggregation in the notes is to be discussed. The national public sector accounting frameworks analysed in this paper can be used as an example of how this disaggregation could look like.

Table 6: Summary practical application difficulties and the resulting matters for discussion

It is to be noted that taking stock is a first step before applying accrual based accounting/IPSAS. Member States that do not have an inventory in place should take into account that this is a time-consuming and complex exercise. In this stock-taking process

relevant information needed for measurement purposes is to be gathered, which results in another complexity to be considered. In EY's view having an inventory in place will also lead to a better management of assets. Given the importance, this item is to be further discussed with the EPSAS stakeholders.

In this issue paper, not only the application of the IPSAS 17 requirements to infrastructure assets was analysed but also the application of IPSAS 23 on grant accounting and IPSAS 21/26 on impairment. The application of these standards is in EY's view also a matter for discussion with EPSAS stakeholders since this can be complex in practice.

The following table can be used to facilitate these discussions:

	Practical application difficulties	**Matters for discussion with EPSAS stakeholders**
Financing of infrastructure assets	Infrastructure assets are often financed through grants. If conditions are linked to these grants, a financial liability will need to be accounted for. In practice the application of these requirements can be complex since accounting can involve different layers of government.	Given that there is an interplay between accounting for infrastructure assets and grant financing, additional guidance would be helpful.
Impairment of infrastructure assets	The impairment indicators applicable to all assets are to be applied to infrastructure assets. There are many indicators and it can be complex in practice to consider all of them given the large amounts of infrastructure assets.	It should be discussed whether it is feasible to track all these impairment indicators. A shortening of the list can be explored. The Member State France can serve as an example of how this list can be shortened.
	Two methods can be used to measure the recoverable service amount, the fair value less costs to sell and the value in use. The fair value less costs to sell is difficult to measure in practice due to the absence of an active market.	It could be explored whether the use of the fair value less costs to sell can be removed for infrastructure assets from a practical point of view.

Table 7: Summary practical application differences in the area of impairment and financing by grants and their resulting matters for discussion

Annex 1: Summary accounting treatment National public sector accounting frameworks versus the IPSAS 17 treatment.

	IPSAS	France	Austria	City of Essen
Definition of infrastructure assets	No specific definition, only characteristics usually displayed by infrastructure assets are listed. No explicit categorization is made, however some examples of infrastructure assets are provided.	No specific definition, infrastructure assets are part of the classes and sub-classes of property, plant and equipment. The infrastructure assets are not disaggregated on the face of the statement of financial position, but are disaggregated into three categories in the notes.	No specific definitions, only characteristics usually displayed by infrastructure assets are listed. The infrastructure assets are disaggregated on the face of the statement of financial position into two categories.	No specific definition, the guidelines only list examples of infrastructure assets. The infrastructure assets are disaggregated on the face of the statement of financial position into six categories.
Recognition	General property, plant and equipment recognition criteria are to be applied.	General property, plant and equipment recognition criteria are to be applied. Additional guidance is provided to determine economic ownership of the infrastructure assets.	General property, plant and equipment recognition criteria are to be applied.	General property, plant and equipment recognition criteria are to be applied.

	IPSAS	France	Austria	City of Essen
Recognition	Subsequent expenditure is expensed if it relates to repairs and maintenance. However, replacement parts are capitalized if the recognition criteria are met and the cost of major inspections is capitalized if this is a condition of continuing to operate the asset.	Additional guidance is provided: subsequent expenditure are expensed if these do not improve the original asset. If the depreciated replacement cost is used, expenses related to preventive maintenance or rehabilitation or capitalized.	Additional guidance is provided: subsequent expenditure is expensed unless it prolongs the asset's useful life or adds functionality.	Additional guidance is provided as the subsequent expenditure treatment is a challenge in practice.
Measurement	General property, plant and equipment measure-ment rules are to be applied: cost (in exchange transactions) and fair value (in non-exchange transactions.	Infrastructure assets are initially measured at cost (exchange transaction) or at fair value (non-exchange transaction).	Infrastructure assets are initially measured at cost.	Infrastructure assets are initially measured at cost.

	IPSAS	France	Austria	City of Essen
Measurement	Either the cost or the revaluation model can be applied for subsequent measure-ment purposes.	The cost model is used in subsequent measurement.	The cost model is used in subsequent measurement.	The cost model is used in subsequent measurement.
Measurement – Component approach	The component approach is to be applied and infrastructur e assets are to be broken down into components at the time of initial recognition. Each component needs to depreciated separately.	The component approach is not applied.	The component approach is not applied.	The component approach is applied, but not to all infrastructure assets.
Disclosures	General property, plant and equipment disclosure requirements are to be complied with.	General property, plant and equipment disclosure requirements are to be complied with. Disaggregation of the infrastructure assets in the notes.	General property, plant and equipment disclosure requirements are to be complied with. Disaggregation of the infrastructure assets in the notes.	General property, plant and equipment disclosure requirements are to be complied with. Disaggregation of the infrastructure assets in the notes.

	National framework deviates from IPSAS 17
	National framework provides additional guidance compared to IPSAS 17
	National framework does not deviate from IPSAS 17

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